Five areas of virtual health disruption

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Prior to the COVID-19 pandemic, virtual health followed an increasing but relatively limited adoption curve. Our biannual survey of US physicians found that, as of 2020 and prior to COVID-19, only 19 percent of physicians had implemented some form of video visits at their primary work setting.[1]

The pandemic started a seismic shift toward virtual health, which has emerged as a necessary, vital, and significant part of the health care ecosystem. Many health systems have embraced virtual visits at an unexpected velocity, as exemplified by a New York academic center that observed a 40-fold increase in nonurgent virtual visits between March and April.[2] Patients have become more educated and aware of the convenience of virtual health, and they show no signs of wanting to travel to the doctor's office and wait to be seen.

Meanwhile, even once-skeptical clinicians now acknowledge the value of virtual health in engaging with their patients. Further, a broadened reimbursement landscape, driven by multiple CMS telehealth waivers, has lifted one of the last barriers to virtual health adoption.[3] While the regulatory permanence of these waivers is in question, it is safe to say that consumer demand for virtual health is here to stay and, along with it, a new care model.

In our "Five Areas of Virtual Health Disruption" framework, we identify five areas where virtual health will transform the care continuum:

- **Wellness, prevention, and health management**
- **Outpatient care**
- **Inpatient care**
- **Interventions and research**
- **Health care administration**

Within each of these areas, our framework identifies orthodoxies that existed before COVID-19, along with examples of how virtual health is reshaping care models and the patient experience. Orthodoxies are generally accepted approaches, which are typically developed out of best practices that have been standardized. But over time, orthodoxies can become outdated.

The COVID-19 pandemic might have disrupted many orthodoxies, and the post–COVID-19 recovery period offers an opportunity to determine which disruptions to care models should be adopted permanently. We are urging our health care clients to use our framework to determine areas that have already started to shift to a new care model. The next step is to identify which virtual health capabilities—which might have been cobbled together hastily over the past months—need to be formalized.

Five Areas of Virtual Health Disruption

Health management

Prevention
Orthodoxy: PCPs direct preventative care, and patients must initiate prevention visits

Disruption: Self-service health apps and digital assistants with integrated wellness and prevention skills empower the health customer

Coordination
Orthodoxy: Care coordination and care management rely on phone outreach

Disruption: Universal shared treatment plans, remote monitoring, patient-directed digital nudges, and app-based communication improve coordination and adherence

Wellness
Orthodoxy: Proactively seek out a wellness coach (e.g., trainer, nutritionist) to receive advice in-person

Disruption: Enroll in virtual wellness programs with on-demand virtual coaching, curated educational content, and automated adherence reminders

Out-patient care

Access
Orthodoxy: Call doctor's office or go in-person to ER/urgent care to triage health issue

Disruption: Use virtual triage bot as access point for convenience and to manage cost of initial advice; then self-service schedule a **teleconsult** in lieu of in-person visit

Specialty
Orthodoxy: PCP recommends specialist consult, resulting in a second appointment

Disruption: AI-enabled self-diagnosis and direct-to-specialist referral in lieu of PCP visit or obtain a virtual specialist consult in real time during a PCP visit

Diagnostics
Orthodoxy: Diagnostics are performed and evaluated by health care providers

Disruption: Self-service or home-based diagnostics and AI enabled interpretation yield first-line results

Rehab
Orthodoxy: Rehabilitate injuries in-person at physical therapy centers

Disruption: Engage in virtual assistant–guided rehab at home; access behavioral health services supplemented with smart device apps

In-patient care

Observation
Orthodoxy: Stay at hospital for overnight observation (hospital bed or ER boarding)

Disruption: Discharge from ER with continuous monitoring at home or in a post-acute facility

Rounding
Orthodoxy: Medical attending leads care team for bedside rounds; providers interact by pager and fax

Disruption: Specialist conducts virtual rounding using setups such as e-ICU; providers use secure digital communication for in-the-moment consults

In-patient stay
Orthodoxy: Admit from ER for low-acuity conditions and stay in hospital multiple days

Disruption: Deliberately triage patients that can be effectively cared for in the home environment with remote monitoring

Intervention and research

Med tech
Orthodoxy: Med Tech reps join surgeon in OR to provide tech support and training

Disruption: Med Tech rep joins via video-conference and/or operates devices remotely

Procedure
Orthodoxy: Surgeon is present in the OR during surgery

Disruption: Surgeon oversees or performs surgery from a location outside of the OR using remote robotic surgery

Trials
Orthodoxy: Clinical trials are initiated and conducted in-person at academic centers

Disruption: Virtual trials include real-world evidence (RWE) from multiple data feeds and patient-reported outcomes

Administration

Payment
Orthodoxy: Limited and state-specific reimbursement for virtual health services

Disruption: Site-neutral payments empower physicians and catalyze the other areas of disruption

Billing
Orthodoxy: Impossible to tell out-of-pocket and total cost ahead of time, and managing bills is a nightmare

Disruption: Apps with integrated provider search and price estimate features create cost transparency up front

Disruption is upon us

We have already seen concrete examples of virtual health disruption in the market. Below we highlight some interesting instances of how health plans, hospitals and health systems, and other ecosystem players are contributing to the disruption that is occurring across the care continuum

Health management

Wellness: BlueShield of Northeastern New York is offering virtual wellness support to engage at-risk New Yorkers. The COVID-19 Member Well-being Outreach Program provides members with personalized outreach calls offering telehealth support, assistance with online prescriptions, education, and additional resources focused on improving the health of members as they follow stay-at-home guidance.[4]

Coordination: UC San Diego Health has launched a trial of an eCOVID program, which provides remote patients with a wearable device to continuously monitor vital signs such as heart rate and oxygen-saturation levels. It also tracks their activity level and quality of sleep. This data, along with outputs from a daily questionnaire app, is sent to a secure dashboard that provides alerts and guidance for providers to help prioritize caseloads.[5]

Out-patient care

Diagnostics: In partnership with Healthy.io, Geisinger conducted a study to measure the effectiveness of a smartphone-based home test for chronic kidney disease. To perform the test, patients urinate on a test strip and then scan the strip using a smartphone camera. The 60-second scan allows Healthy.io's computer-vision techniques to detect early signs of kidney disease, UTI infections, bladder cancer and/or pregnancy-related complications such as preeclampsia risk.[6]

Access: Anthem, Inc. launched a digital application called Sydney Care that includes an artificial-intelligence (AI-powered symptom checker, personalized engagement features, and access to personalized health information as well as virtual health services. The app connects consumers with virtual primary care providers and lets users to take a COVID-19 assessment.[7]

Rehab: The Duke Clinical Research Institute has partnered with Reflexion's Virtual Exercise Rehabilitation (VERA to better understand the effects of virtual physical therapy on patients before and after a total knee-replacement surgery. VERA supports a robust rehabilitation experience in the home through an avatar coach, a 3D imaging system, a dashboard to support clinical review, and telemedicine capabilities.[8]

In-patient care

In-patient Stay: Lifesprk, a home-based care provider, has partnered with North Memorial Health Hospital to create a hospital-at-home model during COVID-19. The model gives patients access to non-stop virtual support from Lifesprk's team and an in-home monitoring kit that includes pulse oximeters, scales, and video-calling capabilities.[9]

Coordination: Houston Methodist is using cameras, connected devices, and machine-learning algorithms to operate a command center that enables remote care for patients in ICUs, including COVID-19 cases. Information from the connected machines is fed into the patient-monitoring and analytics platform and alerts providers about which patients should be watched more carefully.[10]

Intervention and research

Med Tech: Explorer Surgical built cloud-based surgical procedure workflows that allow care teams to connect to the OR remotely. The platform provides live content in a simulation environment for provider training. During procedures it can display images and videos on mobile tablets for providers in the room, while reps monitor progress and provide live feedback remotely.[11]

Trials: Deloitte's MyPath for Clinical is a modular, patient-centric platform that can help accelerate the execution of digital clinical trials by taking a holistic approach to connect clinical trial participants, investigators, and clinical research associates. It leverages modern cloud, mobile and connected medical device technologies and enables personalized digital patient engagement with guidance and support along the clinical trial lifecycle with enhanced direct connectivity to investigators and patient communities.[12]

Administration

Payment: Aetna, Inc. reimburses all providers for telehealth at the same rate as in-person visits for applicable telehealth codes, including for mental health care services.[13]

Billing: Change Healthcare is launching a consumer health platform that collects health information (e.g., clinical, financial, administrative from multiple electronic sources. and helps consumers evaluate health care choices by conducting online research, reading reviews, comparing prices, and engaging those who best fit their needs and budgets.[14]

Five questions to consider

Virtual health disruption is already upon us. Here are five key questions that health care organizations should consider as they take steps toward a more virtual health care ecosystem:

- How can your organization build upon and scale virtual health capabilities that worked well during the pandemic?
- How can you implement virtual health technologies without sacrificing the quality of the care?
- What do you need to offer your clinical care teams to support this new environment?
- Which governance structures will help your organization integrate new virtual health capabilities and manage operations as you scale?
- Which of your strategic partners can help you to be disruptive rather than disrupted?

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Endnotes:

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